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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/774,577

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Jennifer A. Coggan

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12/21/2010

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EXAMINER

GARRETT, DAWN L

ART UNIT

PAPER NUMBER

1786

MAIL DATE

DELIVERY MODE

12/21/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/774,577	<b>Applicant(s)</b> COGGAN ET AL.	
	<b>Examiner</b> Dawn Garrett	<b>Art Unit</b> 1786	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 8-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 14-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### **Response to Amendment**

1. This Office action is responsive to the response received October 5, 2010. No claims were amended.

2. The current species under consideration is the following:

A 1,1'-binaphthyl derivative comprising hydrogen substituents (i.e., a compound according to Formula I of claim 1 wherein R1 and R2 are hydrogen and R2 and R3 are hydrogen). Claims 8-13 are currently withdrawn as non-elected. Claims 1-7 and 14-16 are currently under consideration.

### **Claim Rejections - 35 USC § 103**

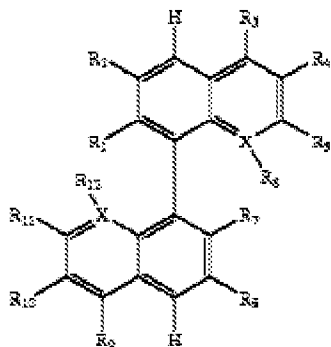
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-7, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2004/0106003 A1).

Chen et al. teaches EL devices comprising a binaphthalene derivative according to the following formula:

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While not exemplified in an example of the reference, Chen et al. teaches a compound wherein each of the R variables may be hydrogen atom and X may be carbon (see par. 10, page 1). The device may comprise the binaphthalene derivative as a host together with a functional light emitting dopant in an emissive layer per instant claims 2, 3, 14, and 15 (see claim 3, page 6). The binaphthyl compound is in a layer of the device per instant claims 5 and 7 (see claims 1, 4 and 8 on pages 5 and 6). The compound may be part of a hole transport layer per instant claims 6 and 14 (see claims 8 and 12 on page 6). Electron transporting material is included in the device per claims 6 and 14 (see par. 35 and par. 48-51). Per instant claim 14, an emissive layer and at least one charge transporting layer, which includes an electron transport layer and hole transport layer is included (see claim 8, 11 and 12 on page 6).

Although Chen et al. does not exemplify a binaphthyl derivative wherein X is carbon and all R variables are hydrogen, it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed such a binaphthyl derivative and to have expected to achieve a functional device comprising the derivative, because the derivative is within the teachings of Chen et al. for a compound for use in an EL device as a host, dopant or charge transporting material.

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5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2004/0106003 A1) in view of Sato et al. (JP 11-302639 A). Chen et al. is relied upon as set forth above.

Chen et al. teaches the use of binaphthylene derivatives as host material together with a light emitting dopant in an emissive layer of an EL device. Chen et al. is silent with respect to the amount of dopant dispersed in the host material. Sato et al. teaches in analogous art the use of 0.1 to 10% by weight of a dopant (see par. 43). Regarding claim 3, in the alternative that Chen et al. does not specifically teach a dopant having the bandgap property of claim 3, Sato et al. teaches a suitable dopant for an emissive layer is perylene, which is the same as a specifically named dopant in the instant specification (see par. 43). It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed an emissive layer comprising 0.1 to 10 % by weight of a dopant material such as perylene, because one would expect to achieve a functional light emitting layer for an EL device.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2004/0106003 A1) in view of Suzurisato et al. (JP 2002-324676). Chen et al. is relied upon as set forth above.

Chen et al. is silent with respect to the specific features (i.e., specific materials of functional layers and /or thickness) of a device per claim 16, but does teach functional multi-layers for forming the light emitting device (see claims 8-12 on page 6). Suzurisato et al. teaches, in analogous art, an EL device having an anode, hole injection layer, hole transportation layer, luminous layer, electron transportation layer, electron injection layer and cathode layer

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(see par. 159). With regard to claim 16, an indium tin oxide anode can be formed at a thickness of 200nm (see par. 169), the hole injection layer may be formed of copper phthalocyanine (see par. 54) and the buffer layers (the hole injection layer as named by Suzurisato et al. ) may be in a thickness of 0.1 to 100 nm (see par. 56), the hole transportation layer is formed of a tertiary amine (see par. 65) and is formed in a thickness of 5nm-5 micrometers (see par. 84), the thickness of the luminous layer is 5 nm to 5 micrometers (see par. 119), the cathode may comprise a magnesium and silver alloy of 200 nm thickness (see par. 170). It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the Chen et al. device having EL device functional layers as taught by Suzurisato et al. and to have expected the predictable result of light emission from the device, because one would expect the layers taught by Suzurisato et al. to provide the needed functions for an EL device to efficiently emit light.

### **Allowable Subject Matter**

7. Allowable subject matter has been previously discussed in the prior office actions based upon previously considered species; please see prior Office actions. No claims are directed solely to those allowable species, so no claims are currently indicated as allowed.

### **Response to Arguments**

8. Applicant's arguments filed October 5, 2010 have been fully considered but they are not persuasive.

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Applicant argues "The Office Action admits that Chen does not identify the selected species...". The examiner respectfully submits the rejection states "While not exemplified in an example of the reference, Chen et al. teaches a compound wherein each of the R variables may be hydrogen atom and X may be carbon (see par. 10, page 1)" (emphasis added). Chen et al. clearly teaches each R variable may clearly be hydrogen and X may be carbon.

Applicant argues Chen et al. teaches hundreds of different species. In response, the examiner notes that the fact that a reference "discloses a multitude of effective combinations does not render any particular formulation less obvious." *Merck & Co., Inc. v. Biocraft Labs*, 874 F.2d 804, 808 (Fed. Cir. 1989) *In re Corkill*, 771 F.2d 1496, 1500 (Fed. Cir. 1985) (obviousness rejection of claims affirmed in light of prior art teaching that "hydrated zeolites will work" in detergent formulations, even though "the inventors selected the zeolites of the claims from among 'thousands' of compounds"); see also, *In re Susi*, 440 F.2d 442, 445 (CCPA 1971) (obviousness rejection affirmed where the disclosure of the prior art was "huge, but it undeniably include[d] at least some of the compounds recited in appellant's generic claims and [was] of a class of chemicals to be used for the same purpose as appellant's additives."). The examiner further notes, applicant has not provided any clear evidence of unexpected or superior results in selecting the current species over other species taught by Chen et al.

Applicant alleges Chen et al. may teach away from the selected species, since Chen et al. differentiates between "what Chen et al. refers to a binaphthalene and a binaphthalene derivative...". The examiner respectfully disagrees that Chen et al. teaches away from the species under consideration. The examiner respectfully notes that Chen et al. clearly teaches a formula corresponding to the instant formula wherein each substituent group may be selected as

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hydrogen and the ring X variable may be selected as carbon. Additionally, binaphthalene (clearly known in the art, see Chen et al. par. 20) and binaphthalene derivatives are for the same purpose and solve the same problem. One would expect binaphthalene in a light emitting device to result in a predictable outcome of light emission from the device.

Applicant further argues the species is not shown in a preferred embodiment. In response, “[A] reference disclosure must be evaluated for all that it fairly [teaches] and not only for what is indicated as preferred.” In re Bozek, 416 F.2d 1385, 1390 (CCPA 1969). Furthermore, non-preferred embodiments can be indicative of obviousness (see In re Lamberti, 192 USPQ 278 (CCPA 1976); In re Boe, 148 USPQ 507 (CCPA 1976); In re Kohler, 177 USPQ 399 (CCPA 1973)), and a reference is not limited to working examples (see In re Fracalossi, 215 USPQ 569 (CCPA 1982)).

The rejections over Chen et al. are respectfully maintained.

### Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,



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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571) 272-1523. The examiner can normally be reached Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dawn Garrett/  
Primary Examiner, Art Unit 1786

December 16, 2010